

**TESTIMONY OF LARK HAYES  
SOUTHERN ENVIRONMENTAL LAW CENTER**

**REPRESENTING THE VIEWS OF THE**

Altamaha Riverkeeper  
Conservation Council of North Carolina  
Georgia Forest Watch  
Neuse River Foundation  
North Carolina Coastal Federation  
Pamlico Tar River Foundation  
Residents United for Planning and Action  
Swamp Watch Action Team  
South Carolina Coastal Conservation League  
Southeast Georgia Conservation Group of the Georgia Chapter of the Sierra Club  
Southern Appalachian Forest Coalition  
Southern Environmental Law Center  
Virginia Forest Watch  
Wild Alabama

**BEFORE THE**

**COMMITTEE ON AGRICULTURE  
SUBCOMMITTEE ON DEPARTMENT OPERATIONS, OVERSIGHT, NUTRITION  
AND FORESTRY  
U.S. HOUSE OF REPRESENTATIVES**

**CONCERNING THE FORESTRY-RELATED PROGRAMS OF THE 2002 FARM BILL**

**June 12, 2001  
WASHINGTON, DC**

Mr. Chairman, members of the Committee, my name is Lark Hayes. I am a senior attorney at the Southern Environmental Law Center in Chapel Hill, North Carolina. I am an attorney by training and professionally have focused exclusively on environmental law and policy in the Southeastern United States for almost 20 years.

The Southern Environmental Law Center is a regional environmental organization focused on protection of the natural resources of six Southeastern states including Virginia, the two Carolinas, Georgia, Alabama and Tennessee. With offices in Charlottesville, Virginia, Atlanta, Georgia and Chapel Hill, our staff of attorneys and environmental professionals address a range of environmental issues from forests and wetlands to transportation and coastal development to air and water quality. Because the region in which we work is the largest timber producing region of the country, is leading the nation in the loss of forestland, and is home to the greatest number of remaining wetlands in the lower 48 states, the Southern Environmental Law Center has an intense interest in a reauthorization of Farm Bill programs that will address the current needs of forestland owners while also enhancing protection of the many ecological values provided by our Southern forests, and forests across the country.

I appreciate the opportunity to appear before you today on behalf of the Southern Environmental Law Center. I also have the privilege of representing the views of a broad spectrum of local and state organizations in the Southeast who are also vitally concerned about the forestry programs within the Farm Bill. These groups are listed on the title page of my written testimony. Some of the organizations are actually coalitions which represent numerous other groups. For example, the North Carolina Coastal Federation has 200 affiliated local groups and the Dogwood Alliance has some 70 member groups from 13 Southeastern states.

An overarching point that I'd like to make at the outset is that the forestry-related programs in the Farm Bill have historically not received either the attention or the funding which we believe is badly needed to assist forestland owners and also address the issues facing our nation's private forestlands. We hope through our testimony today and through ongoing work with this Subcommittee and other interested organizations, including those who have also testified today, to call appropriate attention to the forestry-related programs of the Farm Bill and to enhance them significantly.

My remarks today offer a brief overview of current conditions in the Southern forest landscape, focusing on a few of the most significant developments and projected trends with respect to forests and forest landowners in our region. The Southeast is now the largest timber producing region of the world, providing national relevance to my regional perspective. As I will discuss below, the increasing timber harvest across our region raises several concerns of national significance. These remarks discuss each issue of concern and offer some recommendations on how the next Farm Bill could be crafted to ameliorate some of the adverse trends, or at least help reduce their impact on the ground. I should add that, at a bare minimum, we want to ensure that the next Farm Bill does not exacerbate any of these adverse trends or subsidize undesired forestry practices.

## THE SOUTHERN FOREST LANDSCAPE

While the South has long been significant for its forestland and timber production, many people are surprised to learn that two-thirds of the timber harvests in the United States now occur in this region. Indeed, the South is frequently referred to as the “fiber basket of the world.” Harvest levels have intensified here in recent decades, up 50% in a 20 year period from 1976 to 1996. While the South has been increasing its timber harvests, all other regions of the country combined saw their harvest levels drop by one-fourth. The Southern Environmental Law Center is active in three of the four highest timber producing states in the U.S., to wit, Georgia, Alabama and North Carolina (Mississippi is also among the top four states). With these figures in mind, I trust you may agree that the issues of Southeastern forests and forestry are, to a significant degree, the forestry issues for the country as a whole.

The increasing concentration of the U.S. harvest in the South and the resulting intensification of harvests in recent decades raises serious concerns about the future of Southern forests. Using the traditional approach of comparing “growth” versus “drain” (or harvest), we already know that softwood harvests exceed growth across the region. In some states like Alabama and South Carolina, the combined harvest of softwoods and hardwoods also is exceeding growth. Again, focusing on the states in which the Southern Environmental Law Center works, the aggregated harvests for all species in the two Carolinas, Georgia and Alabama are at unsustainable levels, using growth versus drain as the measure. While, unfortunately, we do not have a universally accepted measure of the ecological sustainability of our forests, alarm bells are clearly being sounded over the potential environmental impacts of these harvest levels on wildlife, rare species and water quality.

Concerns over these unsustainable harvest levels and their potential environmental consequences led North Carolina to conduct a comprehensive study of the economic and environmental effects of wood chip mills.<sup>1</sup> (These mills process logs into small chips for shipment and further processing at paper mills and other facilities.) Chip mills in our region have increased dramatically in number in recent decades from 62 to 162 between 1985 and 2000. In North Carolina, the increase was 2 to 18 mills from 1980 to 1997. The North Carolina Chip Mill Study documented for the first time that the increase in chip mills correlates with increased harvests statewide.<sup>2</sup> While I will refer to some of the other results later in my testimony, the study’s key findings regarding sustainability are that softwood harvests are already at unsustainable levels (drain exceeds growth) and that all harvests (including hardwoods) will be unsustainable by 2005.<sup>3</sup> In addition, a number of federal agencies are combining efforts under the leadership of the U.S. Forest Service to conduct a regional study, known as the Southern Forest Resource Assessment, to investigate many of the same issues. A draft of the federal study is expected to be released in early fall.

Since I can’t say it any better, let me offer an excerpt from a speech just last year by then Chief of the U.S. Forest Service Mike Dombeck, who regularly spoke out on the issue of sustainable forestry in the Southeast. After noting the same trends that I just described, here’s what the Chief had to say:

This is not some abstract debate over little known plants, obscure fish, or reclusive owls. This is a question of basic sustainability. Harvest cannot exceed

growth if forests are to provide healthy fish and wildlife habitats, clean and pure drinking water, and scenic beauty.

(Excerpt from remarks made by Chief Mike Dombeck at The Intelligent Consumption Forum held in Madison, Wisconsin, on July 19, 2000.)

Consistent with this observation from the former Chief, the increased harvest levels in our region are creating many different pressures on our forest resources, on habitat for wildlife and rare species, and water quality. The North Carolina Chip Mill Study reached some disturbing conclusions about likely consequences for wildlife. Using birds, reptiles and amphibians as indicators of wildlife impacts due to current and projected forest trends, the study predicts most species of conservation concern on private lands in the Coastal Plain and Piedmont will be adversely impacted by forest trends. Particularly hard hit were bird species, with two-thirds of all species of conservation concern in these two regions predicted to be negatively impacted by the loss of mature, natural forests on private lands. Finally, amphibian species are predicted to be overwhelmingly harmed in these two regions.<sup>4</sup>

Informed by our concerns for the overall condition of Southeastern forests, which we believe reflect national issues, let me turn to our key recommendations for enhancing the effectiveness of the forestry-related programs in the next Farm Bill are as follows:

#### **ISSUE OF CONCERN #1: NATIVE FORESTLAND IS BEING LOST AT AN ALARMING RATE**

Due to unprecedented population growth,<sup>5</sup> and sprawling land use patterns, the Southeast is now experiencing a rapid conversion of undeveloped land to urban and suburban uses. In a recent study of land conversion nationwide, Georgia, North Carolina, Tennessee, and South Carolina all ranked in the top ten with respect to the most land converted by states to developed uses in recent years.<sup>6</sup> Between 1992 and 1997, North Carolina lost 101,000 acres of undeveloped land annually, Tennessee another 80,000 acres annually, and South Carolina 72,000 acres annually. Many of the lost acres were forestland.

From 1992 to 1997, forests were the land use type most commonly converted to developed uses.<sup>7</sup> North Carolina is, perhaps, being most adversely affected in terms of absolute numbers of forest acres lost. The state lost 53,000 acres of forestland annually during the most recent reporting period (1992-97) and 79,000 acres annually during the previous reporting period (1987-1992). The rate of forest land loss, however, is a particular concern in Tennessee where the number of acres lost has recently (1992-97) jumped 13-fold from previous years (1987-1992).

Within the context of overall forestland loss, the declines in native, multi-species forests is a special issue in the Southeast. These natural forests are not only being lost to urban and suburban development, they are increasingly being replaced by millions of acres of intensively managed pine plantations. Projections are that monoculture pine will continue to increase while natural pine (including longleaf) and hardwoods decline. In North Carolina alone, an additional 1.1M acres of planted pine acreage is expected by 2020, with declines in all other forest types.<sup>8</sup>

The only federal program that specifically addresses forestland loss is Forest Legacy, an outstanding program created during the Farm Bill reauthorization process in 1990. Its purpose is

“ascertaining and protecting environmentally important forest areas that are threatened by conversion to non-forest uses...” 16 U.S.C. § 2103c(a). Faced with the alarming trends on forestland loss described above, several Southeastern states have recently enrolled in the Forest Legacy Program under the leadership of their State Foresters. Since its inception, this program has also been hugely popular in the Northeast where demand for program dollars has consistently outpaced available funding. Historically, federal dollars appropriated have been extremely modest, although in FY2001 a record \$60M was made available. Many conservation organizations are urging the 107th Congress to appropriate \$100M, at a minimum, to this critically important program.

#### **RECOMMENDATIONS REGARDING LOSS OF FORESTLAND INCLUDING A MANDATORY, MINIMUM LEVEL OF FUNDING FOR THE FOREST LEGACY PROGRAM**

While the annual appropriations process is playing out elsewhere, we want to commend the Agriculture Committee on its foresight in creating this important program, and to report that there is more need than ever to enhance this program to stem the loss of forestland in the Southeast and across the country. The existing statute appropriately targets program dollars on “environmentally important forest areas” which in our region includes forest types that have been greatly reduced in extent, such as longleaf pine, Atlantic white cedar and forested wetlands, among others. Given the pace of forestland loss, it is not an overstatement to say that current needs and opportunities to conserve our natural forests are truly of “once in a lifetime” quality. Accordingly, we recommend that Congress mandate a minimum level of annual funding in the range of several hundred million dollars for this critical program. Such sustained support for the Forest Legacy Program is necessary so that current land acquisition opportunities can be seized for the benefit of this and future generations.

#### **ISSUE OF CONCERN #2: SOUTHEASTERN STATES ARE POORLY PREPARED IN TERMS OF FORESTRY POLICIES AND LAWS TO ADDRESS THE POTENTIAL ENVIRONMENTAL IMPACTS OF CURRENT SILVICULTURAL OPERATIONS.**

Logging and production of forest products has been a part of Southern culture for several centuries now. Few of us who consider ourselves native Southerners are without some family member who has owned forestland or earned a living from timber. Almost all Southerners are familiar with timber harvesting on what I might call a “mom and pop” scale. These operations typically involved natural regeneration of long-rotation, multi-species forests. Only slowly are we understanding the implications of the new industrial-strength variety of modern forestry. The extent and intensity of these operations greatly exceed anything mom and pop could ever have imagined. We’re not just cutting the family woodlot anymore. We’re undertaking such activities as converting massive tracts of our coastal plain from ecologically important forested wetlands into intensively managed, ditched, drained, roller chopped, short rotation monocultures of genetically manipulated pine.

Reflecting this largely bygone era of “mom and pop” scale forestry, most of the environmental protection policies and laws in effect at the state level in the Southeast exempt forestry operations from their coverage, or afford them special, relaxed treatment. And, despite now being the “fiber basket of the world,” none of the Southeastern states with which I’m

familiar have updated their forestry policies and laws adequately to address the potentially significant environmental impacts of current industry operations. With scattered exceptions among the various states, the overall picture in the Southeast is as follows:

- No comprehensive state forest practices acts.
- No pre-harvest notification by loggers or landowners to state officials prior to harvest to ensure an opportunity to offer technical assistance, or for inspections to enforce water quality laws. (Virginia does have a requirement of such notice but apparently no penalty for non-compliance absent a water quality violation.)
- No mandatory certification or training of loggers. (Kentucky has recently initiated such a program.)
- No state-wide, mandatory best management practices (BMPs) for forestry, for example, to require use of riparian buffers or guide the construction and location of logging roads. (Again, only Kentucky has such statewide mandatory BMPs.)

The Subcommittee may be interested to know that the lack of any state forest practices law or mandatory BMPs for forestry has already been a decisive factor in a decision by the Tennessee Valley Authority to deny certain permits necessary for chip loading facilities on the Tennessee River. Following preparation of an environmental impact statement which addressed chip mills and harvesting activities, the agency denied the requested permits in view of the environmental impacts that could result in the absence of adequate state safeguards on timber harvesting.

#### **RECOMMENDATIONS REGARDING MODERNIZATION OF STATE POLICIES AND LAWS CONCERNING SILVICULTURE INCLUDING PROVIDING INCENTIVES TO STATES WITH PROGRAMS THAT MEET A MINIMUM LEVEL OF EFFECTIVENESS.**

We believe strongly that states with high levels of timber harvesting need fundamental environmental safeguards in place to ensure that timber operations do not cause any significant environmental harm. The Farm Bill programs which provide significant federal dollars to the states offer an excellent opportunity to reward forward-looking states that have adopted minimum safeguards for silvicultural activities, and to create incentives to encourage other states to do so promptly. On the other hand, if all states can receive significant federal funding without modernizing state programs, many states are unlikely to bring their forestry policies and laws up to date to face current challenges. Accordingly, we encourage awarding enhanced federal funding through the next Farm Bill only to those states whose programs meet some federally prescribed level of effectiveness.

#### **ISSUE OF CONCERN #3: THE SPECIAL NEED TO PROTECT FORESTED WETLANDS FROM LOSS DUE TO SILVICULTURE.**

Wetlands are a vastly important national resource that provide significant public benefits. Nearly half (47%) of the wetlands in the lower states are found in the ten Southeastern states. Wetlands cover 16% of the region's area, compared to 5% overall coverage for the lower 48 states. Of the various types of wetlands, freshwater forested wetlands are by far the largest

category, representing three-quarters of all the freshwater wetlands in the region.<sup>9</sup> Forested wetlands play a crucial role in maintaining the quality of surface and ground waters, controlling flood levels by storing stormwater, sustaining the salinity balance in estuaries, reducing the effects of erosion, and providing fish and wildlife habitat.

The nation's wetland losses have also been concentrated in the Southeast. From the mid-1970's to the mid-1980's, wetland losses within the region accounted for 89 percent of the net national wetland losses.<sup>10</sup> (More recent figures on wetland loss are not yet available to the public on a regional basis, but the Subcommittee may wish to request them from the U.S. Fish and Wildlife Service.) Moreover, although the average net loss for all combined wetland types declined compared to earlier periods, the rate at which freshwater forested wetlands were converted and lost increased. Forested wetlands of the region were lost or converted to other wetland types at an average rate of 276,000 acres per year from the mid-1950's to the mid-1970's. Alarming, this rate increased to 345,000 acres per year from the mid-1970's to the mid-1980's.<sup>11</sup> The long-term trends in freshwater wetlands since the 1950's show that freshwater forested wetlands have sustained the greatest overall loss in area, declining by 10.4 million acres.<sup>12</sup> The most dramatic losses occurred in freshwater forested wetlands where important bottomland hardwood swamps and cypress sloughs declined by 3.1 million acres.<sup>13</sup>

Agriculture has traditionally been identified as one of the leading causes of wetland loss which prompted Congress to enact the "Swampbuster" provision in the 1985 Farm Bill with relevant amendments in 1996. Now, wetland trend data indicate losses due to silvicultural practices are on par with those caused by agriculture. The 2000 "Wetland Status and Trends Report"<sup>14</sup> to Congress prepared by the U.S. Fish and Wildlife Service quantified, for the first time, wetland losses resulting from silvicultural activities. The report, which Congress required in the Emergency Wetlands Resources Act, assessed wetland trends from the mid-1980's to 1997. The report indicates that of freshwater wetland decline overall, 26% of the loss was attributable to agriculture and 23% to silviculture. Loss due to silviculture resulted in an average annual national loss of 58,500 acres of wetlands during this period. Furthermore, according to the report, "[c]onversion from bottomland forest to managed pine plantations accounts for most of the changes in the freshwater forested [wetland] category in the southeastern United States."<sup>15</sup>

Of course, not all forest management operations are alike, and not all management practices are of concern. Rather, our concerns are focused on the conversion of forested wetlands to intensively managed pine plantations. Naturally forested wetlands are converted to pine plantations by a four step process that involves: 1) construction of necessary access roads; 2) use of heavy equipment to clearcut the natural forest; 3) drainage ditching to dry the site, and 4) site preparation to remove residual natural vegetation and form rows of raised soil beds on which pine seedlings are planted. (See attached photographs illustrating this process at Attachment A).

Through the process of draining and bedding wetlands to increase pine seedling survival, wetland hydrology is effectively modified and sometimes completely lost, resulting in a conversion to upland. The 2000 U.S. Fish and Wildlife Service "Wetlands Status and Trends" document links these processes to the objective of achieving short harvest rotations by establishing loblolly pine plantations:

Partial drainage combined with “bedding” has been practiced to initiate seedling regeneration in wetlands. By the mid 1980s, “bedding” was viewed as essential for the survival and rapid early growth of pine seedlings on poorly drained soils. The process of partial drainage and “bedding” on hydric soils results in sufficient alteration of hydrologic conditions to convert some sites to upland.<sup>16</sup>

When wetlands are converted to uplands, the hydrological characteristics that support wetland functions are lost. In turn, valuable wetland benefits are eliminated. Site-specific information obtained during field investigations conducted by the State of North Carolina, corroborate the findings of the U.S. Fish and Wildlife Service’s “Status and Trends Report” that wetlands are being converted to uplands as a result of forestry practices.<sup>17</sup> The study, performed by the Division of Coastal Management (DCM), was conducted to evaluate the accuracy of wetland maps produced by DCM using Geographic Information Systems. According to DCM wetland mapping procedures, pine plantations are identified as “Managed Pineland.” The study found that 30% of Managed Pineland sites on wetland (hydric) soils lacked the hydrological characteristics to meet the jurisdictional definition of a wetland.<sup>18</sup> This data suggest that as many as one-third of wetlands converted to pine plantations no longer function as wetlands. As to the impacts of forestry on wetlands generally, the study states that “[w]hile agriculture has historically been responsible for large scale wetland conversions, a majority of recent wetland conversions have been due to silviculture.”<sup>19</sup>

Once wetland hydrology has been effectively removed, these former wetland areas are subject to more permanent loss from subsequent development for residential, commercial and industrial uses. In this way, pine plantations become an effective means of removing areas from regulatory protection as wetlands, a process benefited by loose application of the forestry exemption under Section 404 of the Clean Water Act.

In addition to the outright loss of wetlands due to forestry practices, serious concern over the health of forested wetland ecosystems has arisen from the recent pressure to satisfy the nation’s timber needs through the forests of the South. As the demand on Southern wetland forests have continued to grow in recent years, issues are mounting surrounding the effects of such a trend on regional water quality, flooding, diversity, and the long-term status of rare wetland types. Numerous published scientific articles have described three main areas of concern over forested wetland conversion: water quality, hydrology, and habitat diversity. (See photographs illustrating forestry impacts on wetlands at p. 2 of Attachment A.)

#### **RECOMMENDATIONS TO REDUCE WETLAND LOSS INCLUDE EXTENDING SWAMPBUSTER TO PRECLUDE FEDERAL PAYMENTS TO PERSONS CONVERTING WETLANDS TO PRODUCE TIMBER.**

The figures cited above for wetland loss document clearly that neither the Clean Water Act<sup>20</sup> nor any other current strategy is adequately addressing wetland loss due to silviculture. Accordingly, we are looking for the Farm Bill reauthorization to play a positive role in addressing this important issue by extending Swampbuster to silvicultural activities which convert wetlands. Swampbuster reduces incentives to convert wetlands by denying certain federal payments to persons who convert wetlands by draining or other means for the purpose of making production of a crop possible.



Since the adoption of the federal Swampbuster program<sup>21</sup> under the 1985 Farm Bill, losses due to agriculture have diminished substantially. From 1982 to 1992, agricultural practices caused only 20% of all wetland loss (about 31,000 acres annually).<sup>22</sup> The average annual losses due to agriculture in that period were 80% lower than average annual losses in the 10 year period prior to 1982, and over 90% lower than in the period from 1954-1974.<sup>23</sup> The most recent “Wetlands Status and Trends Report” reports that between 1986 and 1997, 198,000 acres of wetlands were lost to agriculture as opposed to the previous decade when 1.0 million acres were lost.<sup>24</sup> The report concludes that implementation of the wetland conservation provisions in the Food Security Act, as amended, contributed to the reduction in the wetland loss rate. We can and should learn from the success of the Swampbuster program for agricultural activities and use the opportunity provided by the Farm Bill reauthorization to curb wetland loss due to silvicultural practices by extending Swampbuster to cover these activities. Such an extension would not preclude appropriate forest management activities in wetlands; it only addresses the conversion of wetlands.

As a complementary measure to conserve wetlands, we also strongly endorse enhancement of the Wetlands Reserve Program (WRP) which provides farmers with incentives to remove marginal land from crop production and to assist landowners restoring and protecting wetlands. The success and impact of the program has been limited due to the enrollment cap. We believe this program should be significantly expanded.

**ISSUE OF CONCERN #4: TECHNICAL FINANCIAL ASSISTANCE PROGRAMS FOR FORESTLAND OWNERS MUST BETTER ADDRESS THE FULL RANGE OF LANDOWNER MANAGEMENT OBJECTIVES WHILE ENSURING SIGNIFICANT PUBLIC BENEFITS.**

Most of the forestland in the Southeast is owned by non-industrial private landowners (NIPFs). These NIPFs, and their decisions about how to manage their lands, will ultimately determine the fate of our forests. Studies show that forestland owners typically have multiple objectives for their lands. These include investment or an asset to leave in their estates, recreation, wildlife, timber or ownership as part of a farm. Interestingly, while NIPFs provide about 70% of the timber cut in our region, a full third never intend to harvest their lands. A recent study in Virginia indicated that only 4% of forestland owners listed income production from sale of timber as an expected benefit from their lands over the next ten years. By contrast, 45% of those landowners listed aesthetic enjoyment as an expected benefit.<sup>25</sup>

Whatever objectives a forest landowner may have, he or she is currently receiving little assistance in properly managing lands as a result of forestry programs authorized by the Farm Bill. Only 5% of forestland owners in our region have a written management plan, for example. Because federal forestry programs have been so underfunded in recent years, many landowners who need assistance, whether to manage for wildlife or timber or to protect water quality, have no access to needed technical assistance or cost-share funds.

## **RECOMMENDATIONS REGARDING SIGNIFICANTLY INCREASED ASSISTANCE PROGRAMS FOR FORESTLAND OWNERS FOR ACTIVITIES PROVIDING PUBLIC BENEFIT.**

To better respond to the diversity of forestland owner objectives, we urge a reauthorization of the Farm Bill that provides more equitable and significantly increased funding for forestland owner assistance programs like Forest Stewardship Program, as well as programs in the Conservation Title like the Wildlife Habitat Improvement Program (WHIP) and Wetland Reserve Program (WRP).

We also believe that in subsidizing landowner objectives, the next Farm Bill must better ensure that the subsidized practices also provide significant public benefits. For example, given the concerns over extensive conversion of native, multi-species forests to monoculture pine, we urge that cost-share programs for forestry be directed toward the regeneration of natural forests and the restoration of native species, including longleaf pine. Subsidizing conversion of natural forest stands to monoculture pine is unwarranted, given the views of many like Pulitzer Prize winning biologist E.O. Wilson who estimates that a pine plantation contains 90 to 95 percent fewer species than the natural forest it replaces.<sup>26</sup> By contrast, we also strongly support cost-share for the implementation of best management practices related to protection of water quality, including riparian buffers and other practices to support protection of our watersheds.

I appreciate the opportunity to appear before the Subcommittee today and hope that my remarks have succeeded in underscoring the need to give more attention to the forestry-related programs in the next Farm Bill.

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<sup>1</sup> "Economic And Ecologic Impacts Associated With Wood Chip Production In North Carolina." A Cooperative Research Proposal to the North Carolina Department of Environment and Natural Resources. Frederick W. Cabbage and Daniel D. Richter, Co-Principal Investigators, July 2000.

<sup>2</sup> Schaberg, R., et. al. "Abstract of Study Results: Economic and Ecological Impacts Associated with Wood Chip Production in North Carolina." July 2000.

<sup>3</sup> Harvest levels may be intensifying at an even faster rate than this study concluded just last year. One of the challenges researchers faced was that the governmentally-sponsored inventory of forests known as the Forest Inventory and Analysis (FIA) had not been updated since 1990. Data for the 2000 FIA are now starting to become available. The recently released data for the Southern Coastal Plain of North Carolina indicates that the NC study researchers significantly underforecast harvest levels in that region. In the study, they predicted that drain would not exceed growth in this particular area until 2012, but the new FIA shows that harvests are already exceeding growth by a full 15%. If the 2000 FIA data reveals similarly enhanced harvest levels in other parts of our region, we may be in even more dire conditions than previously thought with respect to forest sustainability.

<sup>4</sup> Hess, George, et al. "Trends in Forest Composition and Size Class Distribution: Implications for Wildlife Habitat." Working Paper #6I in *Economic and Ecological Impacts Associated with Wood Chip Production in North Carolina*. Table 26. August 2000.

<sup>5</sup> The population of the South (broadly defined from Maryland to Texas) grew by an impressive 17% during the 1990's, adding some 15M people to reach a total population of 100M. Perry, Marc J. and Paul J. Mackun. "Population Change and Distribution: 1990 to 2000." U.S. Department of Commerce, U.S. Census Bureau. April 2001. This gain in population was greater than any other region of the country over the past decade. Several of our southeastern states are at the heart of this Southern growth, some of which grew at phenomenal rates: Georgia by 26% and North Carolina by 21%, for example.

<sup>6</sup> USDA Natural Resources Conservation Service. "Summary Report: 1997 National Resources Inventory (Revised December 2000)." Table 2, p. 21. 2000.

<sup>7</sup> USDA. "1997 National Resources Inventory."

<sup>8</sup> Schaberg, R., et. al. "Abstract of Study Results: Economic and Ecological Impacts Associated with Wood Chip Production in North Carolina." July 2000.

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<sup>9</sup> Hefner, J.M., B.O. Wilen, T.E. Dahl and W.E. Frayer. 1994. "Southeast Wetlands Status and Trends, Mid-1970's to Mid-1980's." U.S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia.

<sup>10</sup> Id.

<sup>11</sup> Id.

<sup>12</sup> U.S. Department of the Interior, Fish and Wildlife Service. "Status and Trends of Wetlands in the Conterminous United States 1986 to 1997." December 2000.

<sup>13</sup> Hefner, J.M. at 1.

<sup>14</sup> U.S. Fish & Wildlife Service, "Status and Trends of Wetlands in the Conterminous United States 1986 to 1997," December 2000.

<sup>15</sup> Id.

<sup>16</sup> Hefner, J.M. at 5.

<sup>17</sup> Shull, L.N., May, 1999, "An Accuracy Assessment of GIS Wetland Mapping in the Coastal Counties of North Carolina." A Report of the Strategic Plan for Improving Coastal Management in North Carolina Performed Under the Coastal Zone Enhancement Grants Program. North Carolina Department of Environment and Natural Resources, Division of Coastal Management.

<sup>18</sup> Id. at 22.

<sup>19</sup> Id. at 5.

<sup>20</sup> In theory, enforcement of Section 404 of the Clean Water Act should be preventing this conversion of forested wetlands to uplands. While silviculture is exempt from Section 404 permitting requirements, the exemption only applies if wetland hydrology is maintained. Forestry activities that convert wetlands to uplands are not exempt.

<sup>21</sup> Swampbuster terminates federal agricultural crop price supports, insurance, and other benefits if farmers convert wetlands to new agricultural use.

<sup>22</sup> McBeth, D., "Wetlands Conservation and Federal Regulation: Analysis of the Food Security Act's 'Swampbuster' Provision as Amended by the Federal Agriculture Improvement and Reform Act," 21 Harv. Envtl. L. Rev. 201, 202 (1997) (citing Ralph Heimlich and Jeanne Mealnson, "Wetlands Lost, Wetlands Gained," National Wetlands Newsletter, May-June 1995, at 1, 23).

<sup>23</sup> Turini, A.N., "Swampbuster: A Report from the Front," 24 Ind. L. Rev. 1507, 1509 (1991) (citing U.S. Fish and Wildlife Service, U.S. Department of Interior, "Wetlands of the United States: Current Status and Recent Trends" (1984)).

<sup>24</sup> Id. at 7.

<sup>25</sup> Birch, et al., "Characterizing Virginia's Private Forest Owners and Their Forest Lands." USDA Forest Service, Research Paper NE-707, 1998

<sup>26</sup> Ted Williams, "False Forests," *Mother Jones*, 2000.

#### ATTACHMENTS:

- A. How Wetlands Are Converted to Pine Plantations, Prepared by Southern Environmental Law Center, Chapel Hill, NC, June 2001.

#### OTHER DOCUMENTS PROVIDED TO THE SUBCOMMITTEE FOR THE HEARING RECORD:

1. "Economic And Ecologic Impacts Associated With Wood Chip Production In North Carolina." A Cooperative Research Proposal to the North Carolina Department of Environment and Natural Resources. Frederick W. Cabbage and Daniel D. Richter, Co-Principal Investigators, July 2000.
2. Hefner, J.M., B.O. Wilen, T.E. Dahl and W.E. Frayer. 1994. "Southeast Wetlands Status and Trends, Mid-1970's to Mid-1980's." U.S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia.
3. U.S. Fish & Wildlife Service. "Status and Trends of Wetlands in the Conterminous United States 1986 to 1997." December 2000.